

WHAT IS CLAIMED IS:

1. An analog switch circuit for sampling an analog signal,
the circuit comprising:

5 an analog switch section including a first n-channel
MOS field effect transistor and a first p-channel MOS field
effect transistor, sources of which are connected, drains of
which are connected, and therefore which are connected in
parallel, for inputting an analog input signal and for outputting
10 a sampled analog output signal;

 a comparator circuit for inputting the analog input
signal and a reference signal and for comparing the input
potential of the analog input signal and the reference potential
of the reference signal; and

15 a voltage boost circuit for setting a potential of a
gate of the first n-channel MOS field effect transistor to a
potential of positive power supply voltage in the case of the
input potential being lower than the reference potential at
the time of the analog switch section being in a continuity
20 state and for boosting the potential of the gate to a potential
higher than the potential of the positive power supply voltage
in the case of the input potential being higher than the reference
potential at the time of the analog switch section being in
a continuity state.

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2. The analog switch circuit according to claim 1, wherein
the comparator circuit includes a filter for absorbing a drop

in the input potential of the analog input signal input at the time of the analog switch section being in a continuity state.

3. The analog switch circuit according to claim 1, further
5 comprising a signal line for inputting a signal for performing the voltage boost regardless of the result of a comparison made by the comparator circuit.

4. The analog switch circuit according to claim 1, further
10 comprising a signal line for inputting a signal for not performing the voltage boost regardless of the result of a comparison made by the comparator circuit.

5. An analog switch circuit for sampling an analog signal,
15 the circuit comprising:

an analog switch section including a first n-channel MOS field effect transistor and a first p-channel MOS field effect transistor, sources of which are connected, drains of which are connected, and therefore which are connected in
20 parallel, for inputting an analog input signal and for outputting a sampled analog output signal;

a comparator circuit for inputting the analog input signal and a reference signal and for comparing the input potential of the analog input signal and the reference potential
25 of the reference signal; and

a circuit for setting a potential of a gate of the first p-channel MOS field effect transistor to a potential of negative

power supply voltage or ground potential in the case of the input potential being higher than the reference potential at the time of the analog switch section being in a continuity state and for setting the potential of the gate to a potential lower than the potential of the negative power supply voltage or the ground potential in the case of the input potential being lower than the reference potential at the time of the analog switch section being in a continuity state.

6. The analog switch circuit according to claim 5, wherein the comparator circuit includes a filter for absorbing a rise in the input potential of the analog input signal input at the time of the analog switch section being in a continuity state.

7. The analog switch circuit according to claim 5, further comprising a signal line for inputting a signal for setting the potential of the gate to the potential lower than the potential of the negative power supply voltage or the ground potential regardless of the result of a comparison made by the comparator circuit.

8. The analog switch circuit according to claim 5, further comprising a signal line for inputting a signal for not setting the potential of the gate to the potential lower than the potential of the negative power supply voltage or the ground potential regardless of the result of a comparison made by the comparator circuit.